

Records and Habitats of the “Rare Click Beetle,” *Cerophytum pulsator* (Haldeman), in Virginia and Maryland (Coleoptera: Cerophytidae)

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The “rare click beetles” make up a small family of 10 species in the Americas and Europe (Lawrence, 1991) and are enigmatic in many ways. The single species known from the eastern United States, *Cerophytum pulsator*, has a wide range, but lives up to its common name in being infrequently found. “Pennsylvania to Illinois to North Carolina” was the distribution known to Horn (1886). Nearly a century ago, three specimens were reported from the District of Columbia (Ulke, 1902). Dury (1902) reported a specimen from Ohio, which Blatchley (1910) noted but, lacking specimens from Indiana when he listed the beetles for that state, said it “is doubtless represented.” Sixty years later, Downie (1970) confirmed this, with a single record from Tippecanoe County. A record from Bay County, Florida (Peck & Thomas, 1998) extends the known range considerably southward. Several recent collections of *C. pulsator* in our area have aroused interest, but, to my knowledge, no occurrences have been published for this region since Ulke’s listing. Reported here are new collection records and some associated notes on the habitat and seasonal occurrence of this seldom-collected beetle.

Little information is available on the life history of *C. pulsator*. Only the larva and habitats of the European species are described (Lawrence, 1991), and the feeding habits are apparently unknown. Adult *C. pulsator* have been “swept from foliage or taken from rotting wood or under dead bark” (White, 1983). The beetle is described and illustrated in general references on North American beetles (Arnett, 1960; White, 1983).

Material Examined and Label Data.-- The specimens

cited here are in the collections of the U.S. National Museum, Smithsonian Institution, Washington, DC; the Virginia Museum of Natural History, Martinsville, VA; and the Maryland Department of Agriculture, Annapolis, MD.

Label data are quoted verbatim except for some commas (inserted for clarity) and bracketed letters that spell out or interpret abbreviations. A forward slash “/” indicates a break between labels on the same pin.

Maryland Records.-- 1 male, “Plummer Is, Md., 4.V.[19]24, R C Shannon, on foliage [sic]”; 1 male, “MARYLAND: Pr. Geo. Co., Cheverly, 38°56'N, 76°55'W, 29 March 1998, coll. W. E. Steiner & J. M. Swearingen / At black light at ground level, mixed broken forest and residential area”; 1 male, “Col[lector]. D. Jump, 11 V 1977, Port Deposit, [Cecil County] Maryland USA”; 1 female, “USA: Maryland: Somerset Co., nr Princess Anne, ex S[outhern]. P[ine]. B[eetle]. Lindgren trap, 10 May 1989, Md. Dept. Agric.”

Virginia Records.-- 1 female, “VIRGINIA: Clarke Co., U. Va. Blandy Exp. Farm, 2 mi. S. Boyce, 39°05' N, 78°10' W, 28 iv - 10 v 1993, Malaise trap, D. R. Smith”; 2 females, “VIRGINIA: Essex Co., 1 mi. S. of Dunnsville, 11 April 1991, J. Kloke & D. R. Smith, Malaise trap”; 1 female, “VIRGINIA: Fairfax Co., 4 km. SW Clifton at Bull Run, 23 April 1983, W. Steiner, A. Gerberich, E. Bishop & J. Boyd”; 1 male, “VIRGINIA: Fairfax Co., Great Falls Park, 29 March 1979, Amnon Friedberg”; 1 female, “Quinton, Va., [New Kent Co.] Under log / U. of Richmond, Va., Mch. 30, 1936, Carroll Williams, Coll. / Rec'd from J. W. Bailey, Apr. 13, 1936,

Fisher / 259"; 3 males, 1 female, "VIRGINIA: York County, 12 km NNW Williamsburg, 37°21'N, 76°44'W, 7-8 March 1992, W. E. Steiner & J. M. Swearingen."

Other Records.— 1 male, "ALAB[AMA], Blount Co., Blount Spr[ings]., 13 April 1985, light trap, T. King."

Field Notes and Discussion.— The recent collection records offer new information on the habits and habitats of *C. pulsator*. Seasonal appearance of the beetles is limited to the generally cooler months of spring, but activity of the beetle may be limited to "warm spells" during that period. The Cheverly, MD, specimen taken at black light suggests that this species can fly (although this has never been observed), and that it does so after dark. Notes taken on this collection indicate an unusually warm spring night, with early flight records for a number of Tenebrionidae and other beetles: "Was 80° F. at dark; breeze from south. Clear but only thin crescent moon." At this site, black lights have been operated on most non-rainy and warmer nights of the year since 1992, one at ground level and the other in tree canopy (from a roof deck ca. 5 m above ground) and insects are selectively taken or observed on white vertical and drop-cloth sheets from dusk until about 2300 h. This was the only *Cerophytum* ever seen at these lights. The additional light-trap record and the capture of *C. pulsator* in the Lindgren and Malaise traps also suggest flight for both sexes as a means of dispersal.

There are several records of the beetle under wood or leaf litter and often at the bases of live trees in mature forest. Ulke (1902) reported "three specimens found under chips and stones in early spring." The Bull Run specimen (in field notes of the author) was found with *Helops* and *Tarpela* spp. (Tenebrionidae) under leaf litter on damp humus at the base of a "big old beech" on a mature forest slope. The four from the Williamsburg site were found in mixed oak-maple-loblolly pine forest, near disturbed edges at the bases of red maple (*Acer rubrum*) trees, again on damp humus but on more level ground. Two males were found after dark on 7 March: "Thunderstorm on the way at 9:30 [P.M.]; had a few minutes to check on tree trunks for beetles around the lot before storm hit; about 68°F. No tenebrionids out, but a rare catch--2 *Cerophytum* out walking on base of live red maple; one at ground level & one 15 cm off ground. Ground around this tree mostly bare except for thin sparse moss patches; not much leaf litter. Tree is about 35 cm DBH; stands near house at edge of drive and garden areas." The two additional specimens were found the following morning: "Storm over; mostly clear tree, early....70°F....at same red maple and a second adjacent

took two more *Cerophytum*--female under a small piece of bark on ground, about 30 cm from tree base; male under leaf layer at base of second tree. They click like elaterids when held." Before being preserved as specimens, the latter two beetles were kept in captivity for about 3 days with some substrates on which they were found (soil with moss, leaf litter, lichen-covered bark) and observed periodically, but no feeding or other activity was noted, other than walking over all surfaces.

The Great Falls specimen was taken by sweeping low vegetation during the day (A. Friedberg, pers. comm.) as was the one reported by Downie (1970), and both of these were in mature deciduous forest understory. The Ohio specimen (Dury, 1902) was beaten from foliage. These records and the label data on the Plummers Island specimen indicate that, while *C. pulsator* seems to be nocturnal and hides during the day, it may rest above ground as well as on it. The Malaise trap collections were also from sites of mature forest (D. R. Smith, pers. comm.). The 1924 specimen from Plummers Island was taken when the vegetation was a mixture of early successional upland and mature floodplain and swamp forest (Erwin, 1981). The beetle has now been collected in a number of ways, but its preferred microhabitat and feeding habits are still to be discovered. From the combined collection data, *C. pulsator* appears to be a vernal, flying, nocturnal beetle of mature, mostly deciduous forests. This information offers some leads to the discovery of its immature stages and an understanding of its niche, and may reveal that it is not as rare as currently believed.

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Mass Mortality of Red-spotted Newts (*Notophthalmus viridescens viridescens* Rafinesque) on a Central Virginia Road

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Large numbers of amphibians and reptiles are killed annually on highways and roads in North America by vehicular traffic (Carpenter & Delzell, 1951; Dodd et al., 1989; Rosen & Lowe, 1994; Fahrig et al., 1995; Ashley & Robinson, 1996). Roads located near or adjacent to wetlands pose special problems for amphibians, especially those that move to and from terrestrial retreats to breeding sites on a seasonal basis (Palis, 1994). Road mortality in pond-breeding ambystomatid salamanders during their breeding migrations has been observed in several locations (Klemens, 1993; JCM, personal

observations). In the mountains of Virginia, red-spotted newts (*Notophthalmus viridescens viridescens*) arrive in breeding ponds in March in large breeding migrations and leave en masse in August for terrestrial hibernacula (Gill, 1978). Gill found that juveniles leave the ponds in late summer and early fall months but did not observe mass migrations. Mass migrations of juveniles have been documented in Massachusetts (Dunn, 1930; Stein, 1938; Healy, 1975), New York (Hulbert, 1969, 1970), North Carolina (Chadwick, 1944), and Ohio (Smith & Pfingsten, 1989), with the highest numbers occurring on